



# **RF Exposure Evaluation Declaration**

Report No.: S20250424832202E03 Issue Date: 06-13-2025

Applicant: Shanghai MXCHIP Information Technology Co., Ltd

Address: 9th Floor, No.5, Lane 2145, JinshaJiang Road, Putuo District,

Shanghai, China(200333)

**FCC ID:** P53-EMC3186

**Application Type:** Certification

**Product:** Embedded Wi-Fi/BLE Module

Model No.: EMC3186-E

Trade Mark: MXCHIP

CFR 47, FCC Part 2.1091 Radio frequency radiation exposure

FCC Rule Part(s):

evaluation: mobile devices.

Item Receipt date: Apr. 24, 2025

**Test Date:** Apr. 26 ~ May. 26, 2025

Compiled By

(Stone Zhang) Senior Test Engineer

Approved By

(Line Chen)

EngineerManager

The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in KDB 558074 D01. Test results reported herein relate only to the item(s) tested.

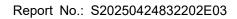
The test report shall not be reproduced except in full without the written approval of Fangguang Inspection & Testing Co., Ltd. Wuxi Branch

The test report must not be used by the client to claim product certifications, approval, or endorsement by NVLAP, NIST or any agency of U.S. Government.



## **Revision History**

Report No.         Version           S20250424832202E03         Rev. 01		Description	Issue Date	
		1	06-13-2025	





## **CONTENTS**

De	scriptio	n	Page
§2.	1033 G	eneral Information	4
1.	PROD	DUCT INFORMATION	5
	1.1.	Equipment Description	5
	1.2.	Product Specification Subjective to this Report	5
2.	RF Ex	φosure Evaluation	6
	2.1.	Limits	6
	22	Calculation Method	7



## §2.1033 General Information

Applicant:	Shanghai MXCHIP Information Technology Co., Ltd		
Applicant Address:	9th Floor, No.5, Lane 2145, JinshaJiang Road, Putuo District, Shanghai,		
	China(200333)		
Manufacturer:	Shanghai MXCHIP Information Technology Co., Ltd		
Manufacturer Address:	9th Floor, No.5, Lane 2145, JinshaJiang Road, Putuo District, Shanghai,		
	China(200333)		
Factory:	Chengdu Xuguang Technology Co., Ltd		
Factory Address:	No.86, Section 2, Gongyuan Road, Longquan Town, Chengdu, Sichuan, China.		
Test Site:	Fangguang Inspection & Testing Co., Ltd.		
LAB ID:	CN5037		
Test Site Address:	No.8 Ningyun Rd., Xinwu District Wuxi, Jiangsu 214000 China		
FCC Rule Part(s):	FCC Part 2.1091		
FCC ID:	P53-EMC3186		
Test Device Serial No.:	S/N.:/		
Test Device Serial NO.:	☐ Production ☐ Engineering		



### 1. PRODUCT INFORMATION

### 1.1. Equipment Description

Product Name:	Embedded Wi-Fi/BLE Module
Test Model:	EMC3186-E
Trade Mark:	MXCHIP
Input Voltage Range:	DC 3.3V
Software Version:	A245
Hardware Version:	1.0
EUT sample number:	S20250424832202-1-1/-1-2

Note: This information is provided by the Customer and its authenticity is the responsibility of the Customer.

## 1.2. Product Specification Subjective to this Report

Operating Frequency	BLE: 2402~2480MHz
Operating Frequency	802.11b/g/n-HT20: 2412 ~ 2462MHz
Number of Channels	BLE: 40
	802.11b/g/n-HT20: 11
	BLE: 2MHz
Channel Spacing	802.11b/g/n-HT20: 5MHz
	BLE: GFSK
Type of modulation	802.11g/n-HT20: OFDM
Antenna Type:	Copper tube Antenna
Antenna Gain:	2.0dBi

Note:The maximum Antenna Gain was declared by the manufacturer.



#### 2. RF Exposure Evaluation

#### 2.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range	Electric Field	Magnetic Field Power Density		Average Time			
(MHz)	Strength (V/m)	Strength (A/m)	(mW/cm <sup>2</sup> )	(Minutes)			
(A) Limits for Occupational/ Control Exposures							
300-1500			f/300	6			
1500-100,000			5	6			
(B) Limits for General Population/ Uncontrolled Exposures							
300-1500			f/1500	6			
1500-100,000			1	30			

f= Frequency in MHz

Calculation Formula:  $Pd = (Pout*G)/(4*pi*r^2)$ 

Where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

r = distance between observation point and center of the radiator in cm

Pd is the limit of MPE, 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

For simultaneous transmission exposure cases, calculation formula is:

$$\sum_{k=1}^{c} \frac{Evaluated_k}{Exposure\ Limit_k} \leq 1$$



#### 2.2. Calculation Method

Temperature:	26.3 °C		
Relative Humidity:	36 %		
ATM Pressure:	101.6 kPa		
Test Data:	2025-05-26		
Test Engineer:	Stone Zhang		

Product	Embedded Wi-Fi/BLE Module
Test Item	RF Exposure Evaluation

Mode	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Antenna Gain (dBi)	P (dBm)	G (mW)	MPE (mW/cm²)	MPE Limits (mW/cm²)
BLE	2480	6.82	2.0	8.82	7.62	0.0015	1.00
802.11b	2462	19.06	2.0	21.06	127.64	0.0254	1.00

Remark: 1. MPE use distance is 20cm from manufacturer declaration of user manual.

Remark: 2. Use the maximum gain of all bands when evaluating.

Remark: 3. For simultaneous transmission is BLE and WLAN (worst case).

$$\sum_{k=1}^{c} \frac{Evaluated_k}{Exposure \ Limit_k} = 0.0015 + 0.0254 = 0.0269 < 1.$$

#### **CONCULISON:**

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 v06.



### **Statement**

- 1. This report is invalid for the following states: without the special inspection and testing stamp or the official stamp of our institution; without the signature of the report authorized officer; if the report is altered.
- 2. It is forbidden to copy partial contents of the report except in full without the approval of our institution.
- 3. The client shall provide the test sample(s) and commission information and be responsible for their authenticity.
- 4. The report content is only applicable to the tested sample(s) this time.
- 5. If there are any objections to the report content, please submit them to our company in writing within 15 days from the date of receiving the report.
- 6. If the reports include both Chinese and English versions, when there are any inconsistencies caused by language, the Chinese version shall prevail.
- 7. Information about laboratory sites involved in our company:

No.2, Fangda Road, Yunpu Industrial Zone, Huangpu District, Guangzhou, Guangdong, China (Huangpu Laboratory)

Building 2 and Building 3, GRGTest Science and Technology Industrial Park, No.8, Chuangyun Road, Panyu District, Guangzhou, Guangdong, China (Panyu Laboratory)

Building G9, China Sensor Network International Innovation Park, No.200, Linghu Avenue, Wuxi, Jiangsu, China (Wuxi Innovation Park Laboratory)

Building 3, Maoxuan Industrial Park, No.81, Jinma Road, Hongshan Subdistrict, Xinwu District, Wuxi, Jiangsu, China (Maoxuan Industrial Park Laboratory)

3/F., Comprehensive Laboratory Building, No.8, Ningyun Road, Xinwu District, Wuxi, Jiangsu, China (Ningyun Road Laboratory)

——This page is blank below this line —